INEOS

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July 31, 2014

**VIA OVERNIGHT MAIL**

Air and Radiation Division
EPA Region 5
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Chicago, IL 60604
Attn: Compliance Tracker

Robert H. Smith
Office of Regional Counsel
EPA Region 5
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**Re: *United States v. INEOS USA LLC*, Case No. 3:12-cv-01404 (N.D. Ohio)—INEOS's Second Compliance Status Report under ¶ 64 of Consent Decree entered July 12, 2012**

Dear Sir or Madam:

Pursuant to Sec. VII., REPORTING REQUIREMENTS, of the above-referenced Consent Decree, INEOS hereby submits the second Compliance Status Report (CSR). Per ¶ 65, this report is due July 31, 2014, and covers the period from July 1, 2013, to June 30, 2014.

a. The number of personnel assigned to LDAR functions at the Facility, excluding personnel whose functions involve the non-monitoring aspects of repairing leaks, and the approximate percentage of time each person dedicated to performing his/her LDAR functions

| LDAR Function(s) | Number of Personnel | Percentage |
|---|---|---|
| On-site monitoring, data input, monitoring device maintenance, leak repairs, other field duties | 3 (contractors) | 100 each |
| Off-site and periodic on-site supervision, auditing, monitoring | 2 (contractors) | 25<br>10 |
| Off-site data input, auditing, reporting | 1 (contractor) | 10 |
| On-site supervision, auditing, reporting, other field duties | 2 (INEOS) | 25<br>5 |

b. An identification and description of any non-compliance with the requirements of Section V (Compliance Requirements for LDAR) of the Consent Decree

None.

c. An identification of any problems encountered in complying with the requirements of Section V (Compliance Requirements for LDAR) of the Consent Decree

None, except as may be otherwise noted herein.

d. The information required in ¶ 39 of Subsection V.G of the Consent Decree

The actions taken to comply with Subsection V.G, Equipment Replacement, Repacking, and Improvement Program (comprising ¶¶ 32-39) are described below. Each piece of equipment that was replaced, repacked, or improved is identified in Table 1.

Subparagraph 33.b. Installing New Valves. All new valves in LDAR service that were installed were documented by the manufacturers as Low-E Valves or fitted with Low-E Packing. This was true for entirely new valves added and the Existing Valves (as of the Effective Date) listed in Table 1 that were replaced for any reason.

Paragraph 34. Replacing/Repacking Existing Valves ≥250 ppm with Low-E Valves or Packing.

b. Timing: If Process Unit Shutdown Not Required. The Existing Valves that were timely replaced or repacked because they had screening values at or above 250 ppm are identified in Table 1. All were replaced except for one control valve that was repacked with Low-E Packing instead.

c. Timing: If Process Unit Shutdown Required. The Existing Valves that required a process unit shutdown to replace or repack are also indicated in Table 1. These valves were all placed on Delay of Repair (DOR). Valves still on DOR as of June 30, 2014, are shown at the end of Table 1 with the anticipated action date of the plant maintenance turnaround (TAR) scheduled for Fall 2015. This date constitutes the currently anticipated schedule for future equipment replacement, repacking, or improvement under ¶ 39(ii).

d. Actions Required Pending Replacings or Repackings.
Except for the two valves identified below (Tags 8106 & 281025), INEOS opted to comply with ELP Subsection V.E, Repairs, even with respect to valves with Screening Levels below 500 ppm. The dates of first and final attempts at repair and repair verification monitoring (RVM) are shown on Table 1.

One valve was required to undergo a drill-and-tap repair attempt under ¶¶ 27 and 28, which was successful.

Two others could not be drilled and tapped due to major safety, mechanical, product quality, and/or environmental issues. Both of these valves (Tags 8106 & 281025) were replaced within 30 days after detection of the leaks.

Paragraph 36. Records of Low-E Valves and Low-E Packing. Manufacturer documentation demonstrating that installed Low-E valves or packing meet the Low-E definition were secured before installation and will be retained for the duration of the CD.

c. Replacing or Repacking Low-E Valves. On one occasion noted in Table 1, a Low-E valve installed pursuant to this program had a Screening Value at or above 500 ppm, so it was replaced again.

Paragraph 37. Connectors.

c. Installing New Connectors. Any new connectors that were installed were of the type judged least likely to leak for their service and operating conditions.

d. Trigger for Replacing or Improving Connectors. No connector replacements or improvement actions were triggered during this reporting period.

e. A description of any LDAR training required in Subsection V.I of the Consent Decree

The annual refresher training with respect to all LDAR Personnel required under ¶ 41 was conducted in August 2013. The training was based on the protocol developed in 2012 and was issued via the facility on-line viewing system, which records each INEOS employee's course completion. The embedded maintenance contractor staff was trained separately but in the same month, using the same materials and with the LDAR Coordinator present as a resource.

In addition to the on-line LDAR training, a live presentation was included in each of the facility's annual Safety Training Days held in September and October 2013, attendance at which is mandatory for all INEOS employees. The presentation emphasized the need to notify the LDAR team of maintenance work and equipment changes affecting LDAR components, and highlighted OELCD compliance and the Low-E valve replacement program.

New INEOS employees completed the on-line LDAR training during their new-hire orientation. The LDAR Coordinator also highlighted the program during the in-person environmental overview presentation made to all new hires. No new contractor LDAR Personnel were added during the reporting period.

f. Any deviations identified in the QA/QC performed under Subsection V.J of the Consent Decree, as well as any corrective actions taken under that Subsection

None.

g. A summary of LDAR audit results including specifically identifying all alleged deficiencies

The second LDAR audit of the facility required in ¶ 45 was completed March 26, 2014. The summary table of results from the audit report is provided as Attachment 1.

h. The status of all actions under any CAP that was submitted pursuant to Subsection V.K during the reporting period, unless the CAP was submitted less than one month before the Compliance Status Report

No CAP was submitted during this reporting period. The CAP for the second LDAR audit is being submitted separately to U.S. EPA by July 31, 2014. The actions under the second LDAR audit CAP, namely supplemental technician Method 21 training and shadow monitoring, have already been completed and implemented.

i. In each Compliance Status Report due after calendar year 2013, a certification that INEOS has conducted annual CERCLA/EPCRA training pursuant to Paragraph 57

INEOS certifies that the annual CERCLA/EPCRA training required under ¶ 57 was conducted in October 2013 and was based on the procedures that were updated in 2012 pursuant to ¶ 56. All INEOS personnel involved in reporting releases received the training via the facility on-line viewing system, which records each employee's course completion. The embedded maintenance contractor staff was trained separately in August 2013, in person using the same materials and documented by attendance sign-in sheets. Newly hired INEOS personnel and contractors during this reporting period received the training during their new-hire orientation.

j. In each Compliance Status Report due after calendar year 2013, a certification that INEOS has conducted the training required pursuant to Paragraph 63

INEOS certifies that the training to prevent venting to the atmosphere by bypassing the Acrylonitrile absorber and/or the AOGI under ¶ 63 was conducted throughout 2013 for INEOS personnel involved in operating and/or monitoring the Acrylonitrile reactors and absorber and/or the AOGI. The training was conducted based on the procedures that were updated in 2012 pursuant to ¶ 62. These updated procedures were issued to personnel to review via the facility on-line viewing system, which records each employee's completion.

Training pursuant to ¶ 63 was further conducted in a classroom setting as part of regularly scheduled operator refresher training, which is documented by attendance sign-in sheets and in the employees' official training records. Subsequently, these personnel will undertake this training again as part of each employee's three-year cycle of refresher training. There were no newly hired personnel who needed to receive such training this reporting period.

k. An identification of each bypass event to the atmosphere from the absorber of the Acrylonitrile Process Unit and/or AOGI that occurred during the reporting period for the Compliance Status Report including the date, time, and duration of the bypass; the quantity of pollutants released as a result of the bypass; the actions taken to minimize the duration of the bypass; the root cause of the bypass; and the corrective actions taken or to be taken to minimize the likelihood of the recurrence of the root cause.

This information is provided in the attached Table 2.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

If you have any questions, do not hesitate to contact Eugene Paik, LDAR Coordinator, at (419) 226-1636 or by email at eugene.paik@ineos.com.

Regards,

Marcelyn K. Boone
Site Director

Attachments

cc: Robert H. Smith (via e-mail)
Constantinos Loukeris (via e-mail)
Raymond Cullen (via e-mail)
Brian Dickens (via e-mail)
James Entzminger (via e-mail)

Table 1
to INEOS's Second Compliance Status Report under ¶64 of Consent Decree
submitted July 31, 2014

A. Existing Valves Replaced or Repacked During Reporting Period

| | | Monitoring Event | | Subparagraph 34.d. Actions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG NUMBER-OLD | SIZE, INCHES | DATE READ | SV READING, ppm | 1ST REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | FINAL REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | DATE REPLACED/ REPACKED | TAG NUMBER-NEW | COMMENTS |
| ACRYLO UNIT | | | | | | | | | | | | |
| 61015 | 3.00 | 05/22/13 | 445 | 05/22/13 | 05/22/13 | 3,376 | 05/24/13 | 05/24/13 | 63 | 12/05/13 | 62015 | DOR |
| 38436 | 3.00 | 05/28/13 | 385 | 05/28/13 | 05/28/13 | 1,360 | 06/05/13 | 06/05/13 | 2 | 07/09/13 | 61763 | DOR |
| 38006 | 0.50 | 05/28/13 | 1,042 | 05/30/13 | 05/30/13 | 538 | 06/10/13 | 06/10/13 | 23 | 07/09/13 | 61811 | DOR |
| 8305 | 6.00 | 08/05/13 | 1,577 | 08/07/13 | 08/07/13 | 510 | 08/14/13 | 08/14/13 | 12 | 12/06/13 | 62011 | Control Valve; DOR |
| 16945 | 3.00 | 08/05/13 | 99,999 | 08/07/13 | 08/07/13 | 13,302 | 08/14/13 | 08/14/13 | 230 | 11/15/13 | 62009 | DOR |
| 15225 | 3.00 | 08/06/13 | 556 | 08/06/13 | 08/06/13 | 525 | 08/14/13 | 08/14/13 | 310 | 11/07/13 | 63502 | DOR; Drilled & tapped per Par. 27 |
| 8876 | 3.00 | 08/06/13 | 976 | 08/06/13 | 08/06/13 | 645 | 08/14/13 | 08/14/13 | 124 | 08/31/13 | 63651 | |
| 23925 | 0.75 | 08/07/13 | 507 | 08/07/13 | 08/07/13 | 704 | 08/14/13 | 08/14/13 | 1 | 08/31/13 | 63653 | |
| 38107 | 0.50 | 08/07/13 | 515 | 08/12/13 | 08/12/13 | 501 | 08/14/13 | 08/14/13 | 26 | 08/14/13 | 61807 | |
| 23561 | 2.00 | 08/07/13 | 30,941 | 08/07/13 | 08/07/13 | 9,008 | 08/14/13 | 08/14/13 | 65 | 08/31/13 | 63652 | |
| 8739 | 2.00 | 08/08/13 | 1,160 | 08/08/13 | 08/08/13 | 1,125 | | | | 08/20/13 | 63587 | TOS before Final Repair Attempt due |
| 51438 | 0.25 | 08/14/13 | 719 | 08/14/13 | 08/14/13 | 1,438 | 08/22/13 | 08/22/13 | 3 | 08/28/13 | 61808 | |
| 10239 | 6.00 | 08/20/13 | 895 | 08/20/13 | 08/20/13 | 1,423 | 08/22/13 | 08/22/13 | 4 | 08/31/13 | 63650 | |
| 21888 | 0.75 | 08/21/13 | 656 | 08/21/13 | 08/21/13 | 481 | 08/22/13 | 08/22/13 | 6 | 08/31/13 | 63654 | |
| 34164 | 4.00 | 08/21/13 | 323 | 08/21/13 | 08/21/13 | 125 | | | | 08/31/13 | 63655 | |
| 34168 | 8.00 | 08/21/13 | 482 | 08/21/13 | 08/21/13 | 247 | | | | 08/31/13 | 63656 | |
| 8106 | 0.75 | 11/05/13 | 12,138 | 11/05/13 | 11/05/13 | 39,153 | | | | 12/04/13 | 63658 | DOR; No drill & tap due to major issue |
| 39469 | 0.75 | 11/13/13 | 914 | 11/13/13 | 11/13/13 | 5,036 | 11/25/13 | 11/25/13 | 5 | 12/06/13 | 62012 | |
| 35975 | 0.75 | 11/13/13 | 442 | 11/13/13 | 11/13/13 | 18 | | | | 12/05/13 | 62013 | |
| 38392 | 3.00 | 11/18/13 | 3,704 | 11/18/13 | 11/18/13 | 1,132 | 11/25/13 | 11/25/13 | 5 | 12/05/13 | 62014 | |
| 23940 | 4.00 | 11/18/13 | 697 | 11/18/13 | 11/18/13 | 340 | | | | 12/05/13 | 63662 | TOS before Final Repair Attempt due |
| 23721 | 0.75 | 11/19/13 | 2,220 | 11/24/13 | 11/19/13 | 4,027 | 11/25/13 | 11/25/13 | 2 | 12/06/13 | 63664 | |

Table 1
to INEOS's Second Compliance Status Report under ¶64 of Consent Decree
submitted July 31, 2014

A. Existing Valves Replaced or Repacked During Reporting Period

| | | Monitoring Event | | Subparagraph 34.d. Actions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG NUMBER-OLD | SIZE, INCHES | DATE READ | SV READING, ppm | 1ST REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | FINAL REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | DATE REPLACED/ REPACKED | TAG NUMBER-NEW | COMMENTS |
| ACRYLO UNIT (continued) | | | | | | | | | | | | |
| 34129 | 4.00 | 11/19/13 | 2,420 | 11/24/13 | 11/19/13 | 1,610 | 11/25/13 | 11/25/13 | 2 | 12/06/13 | 63660 | |
| 34085 | 1.50 | 11/19/13 | 835 | 11/24/13 | 11/19/13 | 596 | 11/25/13 | 11/25/13 | 2 | 03/31/14 | 63663 | DOR |
| 38413 | 3.00 | 01/14/14 | AVO | 01/14/14 | 01/14/14 | AVO | | | | 02/13/14 | 62022 | Control valve |
| 33118 | 0.75 | 02/19/14 | 14,493 | 02/19/14 | 02/19/14 | 56 | | | | 04/14/14 | 62902 | DOR |
| 10418 | 1.50 | 02/19/14 | 580 | 02/19/14 | 02/19/14 | 439 | 02/24/14 | 02/24/14 | 10 | 03/20/14 | 62606 | |
| 51027 | 0.50 | 02/20/14 | 790 | 02/20/14 | 02/20/14 | 222 | | | | 03/20/14 | 62607 | |
| 39605 | 0.75 | 02/24/14 | 297 | 02/24/14 | 02/24/14 | 192 | | | | 03/20/14 | 62092 | |
| 34116 | 0.75 | 02/24/14 | 504 | 02/24/14 | 02/24/14 | 272 | 02/24/14 | 02/24/14 | 132 | 03/20/14 | 62605 | |
| 34107 | 4.00 | 02/24/14 | 832 | 02/24/14 | 02/24/14 | 590 | 02/24/14 | 02/24/14 | 205 | 03/20/14 | 62085 | |
| 40853 | 0.50 | 04/15/14 | 852 | 04/15/14 | 04/15/14 | 202 | | | | 05/15/14 | 62547 | |
| 55954 | 0.75 | 05/06/14 | 2,000 | 05/06/14 | 05/06/14 | 1,165 | 05/06/14 | 05/06/14 | 5 | 06/03/14 | 55849 | |
| 10164 | 1.00 | 05/06/14 | 444 | 05/06/14 | 05/06/14 | 226 | | | | 06/03/14 | 62542 | |
| 40255 | 1.50 | 05/06/14 | 506 | 05/06/14 | 05/06/14 | 196 | | | | 06/03/14 | 62544 | |
| 34388 | 1.00 | 05/07/14 | 1,153 | 05/07/14 | 05/07/14 | 1 | | | | 06/03/14 | 62306 | |
| 39467 | 3.00 | 05/07/14 | 420 | 05/07/14 | 05/07/14 | 247 | | | | 06/03/14 | 62305 | |
| 63653 | 0.75 | 05/13/14 | 581 | 05/13/14 | 05/13/14 | 86 | | | | 06/04/14 | 62307 | LOW-E installed 8/13/13 |
| 33487 | 1.00 | 05/20/14 | 578 | 05/20/14 | 05/20/14 | 234 | | | | 06/03/14 | 62541 | Bonnet leak |
| CAPU | | | | | | | | | | | | |
| 27542 | 1.00 | 07/01/13 | 1,090 | 07/01/13 | 07/01/13 | 972 | | | | 07/29/13 | 61871 | TOS before Final Repair Attempt due |
| 280706 | 0.75 | 07/02/13 | 1,327 | 07/02/13 | 07/02/13 | 2,503 | | | | 07/03/13 | 61886 | Replaced before Final Repair Attempt due |
| 9665 | 2.00 | 07/08/13 | 500 | 07/09/13 | 07/09/13 | 527 | 07/10/13 | 07/10/13 | 94 | 07/31/13 | 61030 | |
| 20870 | 1.00 | 07/08/13 | 383 | 07/08/13 | 07/08/13 | 320 | 07/10/13 | 07/10/13 | 120 | 08/07/13 | 61868 | Control valve; repacked not replaced |

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A. Existing Valves Replaced or Repacked During Reporting Period

| | | Monitoring Event | | Subparagraph 34.d. Actions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG NUMBER-OLD | SIZE, INCHES | DATE READ | SV READING, ppm | 1ST REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | FINAL REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | DATE REPLACED/ REPACKED | TAG NUMBER-NEW | COMMENTS |
| CAPU (continued) | | | | | | | | | | | | |
| 19895 | 1.50 | 07/08/13 | 804 | 07/08/13 | 07/08/13 | 710 | 07/10/13 | 07/10/13 | 12 | 12/20/13 | 61263 | DOR |
| 19903 | 0.75 | 07/08/13 | 337 | 07/08/13 | 07/08/13 | 275 | 07/10/13 | 07/10/13 | 20 | 12/20/13 | 61294 | DOR |
| 20589 | 1.50 | 07/08/13 | 264 | 07/08/13 | 07/08/13 | 19 | | | | 12/20/13 | 61020 | DOR |
| 280140 | 1.00 | 07/09/13 | 4,101 | 07/10/13 | 07/10/13 | 5 | | | | 07/31/13 | 61031 | |
| 19976 | 0.75 | 08/19/13 | 789 | 08/19/13 | 08/19/13 | 1,137 | 08/27/13 | 08/27/13 | 31 | 08/31/13 | 61887 | |
| 61730 | 0.75 | 10/03/13 | 1,987 | 10/03/13 | 10/03/13 | 2,320 | 10/03/13 | 10/03/13 | 229 | 10/21/13 | 61023 | Bonnet leak |
| 280375 | 0.25 | 10/07/13 | 4,143 | 10/07/13 | 10/07/13 | 1,464 | | | | 10/22/13 | 61288 | Replaced before Final Repair Attempt due |
| 30428 | 0.75 | 10/07/13 | 2,958 | 10/07/13 | 10/07/13 | 243 | | | | 10/21/13 | 61279 | |
| 9739 | 3.00 | 10/08/13 | 526 | 10/09/13 | 10/09/13 | 16 | | | | 11/14/13 | 61889 | TOS |
| 9719 | 6.00 | 10/08/13 | 340 | 10/08/13 | 10/08/13 | 228 | | | | 10/24/13 | 61039 | |
| 16208 | 0.75 | 01/03/14 | 8,613 | 01/03/14 | 01/03/14 | 241 | | | | 05/12/14 | 64125 | DOR |
| 15950 | 0.75 | 01/03/14 | 2,713 | 01/03/14 | 01/03/14 | 199 | | | | 05/12/14 | 64130 | DOR |
| 281025 | 1.00 | 01/09/14 | 4,288 | 01/09/14 | 01/09/14 | 999 | | | | 02/04/14 | 64602 | DOR; No drill & tap due to major issue |
| 19796 | 1.00 | 02/11/14 | 640 | 02/11/14 | 02/11/14 | 432 | 02/24/14 | 02/24/14 | 5 | 05/12/14 | 64128 | DOR |
| 280990 | 1.50 | 02/12/14 | 3,250 | 02/13/14 | 02/13/14 | 1,700 | | | | 03/20/14 | 64607 | Control Valve; DOR |
| 280270 | 2.00 | 02/12/14 | 2,076 | 02/13/14 | 02/13/14 | 511 | 02/24/14 | 02/24/14 | 4 | 04/07/14 | 64105 | TOS |
| 280404 | 0.50 | 02/12/14 | 315 | 02/13/14 | 02/13/14 | 1,600 | 02/24/14 | 02/24/14 | 88 | 03/13/14 | 64605 | |
| 27511 | 0.75 | 04/01/14 | 389 | 04/01/14 | 04/01/14 | 9 | | | | 04/30/14 | NA | Eliminated; no new Tag # |
| 27510 | 2.00 | 04/01/14 | 520 | 04/01/14 | 04/01/14 | 211 | | | | 04/30/14 | NA | Eliminated; no new Tag # |
| 280785 | 0.75 | 04/01/14 | 474 | 04/01/14 | 04/01/14 | 87 | | | | 05/12/14 | 64121 | TOS |
| 20883 | 0.75 | 04/01/14 | 2,100 | 04/02/14 | 04/02/14 | 30 | | | | 05/12/14 | 64127 | TOS |
| 280756 | 0.75 | 04/01/14 | 7,604 | 04/01/14 | 04/01/14 | 1,900 | 04/10/14 | 04/10/14 | 3,500 | 05/12/14 | 64113 | Bonnet leak; DOR |

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submitted July 31, 2014

A. Existing Valves Replaced or Repacked During Reporting Period

| | | Monitoring Event | | Subparagraph 34.d. Actions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG NUMBER-OLD | SIZE, INCHES | DATE READ | SV READING, ppm | 1ST REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | FINAL REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | DATE REPLACED/ REPACKED | TAG NUMBER-NEW | COMMENTS |
| CAPU (continued) | | | | | | | | | | | | |
| 280043 | 0.50 | 04/01/14 | 346 | 04/01/14 | 04/01/14 | 504 | 04/10/14 | 04/10/14 | 34 | 05/12/14 | 64111 | TOS |
| 280794 | 0.75 | 04/02/14 | 478 | 04/02/14 | 04/02/14 | 239 | | | | 05/12/14 | 64118 | TOS |
| 19908 | 1.50 | 04/02/14 | 397 | 04/02/14 | 04/02/14 | 767 | 04/10/14 | 04/10/14 | 241 | 05/12/14 | 64117 | TOS |
| 19924 | 0.75 | 04/02/14 | 940 | 04/02/14 | 04/02/14 | 885 | 04/02/14 | 04/02/14 | 241 | 05/12/14 | 64124 | TOS |
| 19371 | 2.00 | 04/02/14 | 4,944 | 04/02/14 | 04/02/14 | 2,002 | 04/10/14 | 04/10/14 | 878 | 05/12/14 | 64126 | Bonnet leak; DOR |
| 280025 | 1.50 | 04/07/14 | 1,342 | 04/10/14 | 04/10/14 | 106 | | | | 05/12/14 | 64112 | Control valve; TOS |
| BAREX UNIT | | | | | | | | | | | | |
| 43310 | 0.50 | 08/26/13 | 436 | 08/26/13 | 08/26/13 | 99 | | | | 09/03/13 | 43308 | |
| 32468 | 0.75 | 09/16/13 | 581 | 09/16/13 | 09/16/13 | 717 | 09/24/13 | 09/24/13 | 180 | 10/16/13 | 43307 | DOR |
| 28319 | 1.00 | 11/11/13 | 882 | 11/11/13 | 11/11/13 | 190 | | | | 12/30/13 | 42412 | TOS |
| 7087 | 4.00 | 02/12/14 | 320 | 02/13/14 | 02/13/14 | 210 | | | | 02/26/14 | 43940 | |
| 28232 | 4.00 | 02/12/14 | 365 | 02/13/14 | 02/13/14 | 6,200 | 02/19/14 | 02/19/14 | 5 | 02/26/14 | 42435 | |
| 43903 | 0.75 | 02/12/14 | 495 | | | | | | | 02/18/14 | 43945 | Replaced as 1st Repair Attempt |
| 43931 | 4.00 | 02/12/14 | 400 | 02/17/14 | 02/17/14 | 46 | | | | 02/27/14 | 43942 | |
| 32484 | 3.00 | 02/12/14 | 629 | 02/13/14 | 02/13/14 | 109 | | | | 02/27/14 | 42437 | |
| 28268 | 0.25 | 02/17/14 | 1,047 | 02/17/14 | 02/17/14 | 12 | | | | 02/26/14 | NA | Eliminated; no new Tag # |

SV - Screening Value
RVM - Repair Verification Monitoring
DOR – placed on Delay of Repair/Replace because process unit shutdown required to replace/repack
TOS – Taken Out of Service prior to 30-day replace/repack due-date
AVO – leak detected, verified through Audio, Visual, or Olfactory sensing

Table 1
to INEOS's Second Compliance Status Report under ¶64 of Consent Decree
submitted July 31, 2014

B. Schedule for Future Existing Valve Replacements or Repacking

| | | Monitoring Event | | Subparagraph 34.d. Actions | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| TAG NUMBER-OLD | SIZE, INCHES | DATE READ | SV READING, ppm | 1ST REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | FINAL REPAIR ATTEMPT DATE | RVM DATE | RVM READING, ppm | ANTICIPATED ACTION DATE |
| ACRYLO UNIT | | | | | | | | | | |
| 34749 | 1.50 | 02/20/14 | 510 | 02/20/14 | 02/20/14 | 100 | | | | Fall 2015 Scheduled Maintenance TAR |
| 34039 | 4.00 | 02/24/14 | 573 | 02/24/14 | 02/24/14 | 302 | 02/24/14 | 02/24/14 | 235 | |
| 34017 | 4.00 | 02/24/14 | 517 | 02/24/14 | 02/24/14 | 3200 | 02/24/14 | 02/24/14 | 5 | |
| 24005 | 0.75 | 02/24/14 | 2051 | 02/24/14 | 02/24/14 | 75.15 | | | | |
| 33583 | 2.00 | 03/18/14 | 566 | 03/18/14 | 03/18/14 | 207 | | | | |
| 61019 | 3.00 | 05/07/14 | 33,701 | 05/07/14 | 05/07/14 | 245 | | | | |
| 33207 | 0.75 | 05/07/14 | 4061 | 05/07/14 | 05/07/14 | 1200 | 05/13/14 | 05/13/14 | 7 | |

SV - Screening Value
RVM - Repair Verification Monitoring

C. Existing Valves Replaced for Any Reason Other Than Leaking

| TAG NUMBER-OLD | SIZE, INCHES | DATE REPLACED | TAG NUMBER-NEW | | TAG NUMBER-OLD | SIZE, INCHES | DATE REPLACED | TAG NUMBER-NEW |
|---|---|---|---|---|---|---|---|---|
| ACRYLO UNIT | | | | | | | | |
| 61018 | 0.75 | 08/13/13 | 61806 | | 41212 | 1.50 | 10/22/13 | 55931 |
| 40480 | 1.50 | 08/20/13 | 55928 | | 41224 | 1.50 | 10/22/13 | 55932 |
| 33208 | 4.00 | 10/21/13 | 63657 | | 40563 | 1.50 | 11/03/13 | 55836 |
| 41210 | 1.50 | 10/22/13 | 55929 | | 41041 | 1.00 | 11/03/13 | 55964 |
| 41210 | 1.50 | 10/22/13 | 55930 | | 41449 | 1.00 | 11/03/13 | 55965 |

Table 1
to INEOS's Second Compliance Status Report under ¶64 of Consent Decree
submitted July 31, 2014

C. Existing Valves Replaced for Any Reason Other Than Leaking

| TAG NUMBER-OLD | SIZE, INCHES | DATE REPLACED | TAG NUMBER-NEW | | TAG NUMBER-OLD | SIZE, INCHES | DATE REPLACED | TAG NUMBER-NEW |
|---|---|---|---|---|---|---|---|---|
| ACRYLO UNIT (continued) | | | | | | | | |
| 41039 | 1.00 | 11/07/13 | 55800 | | 10370 | 3.00 | 03/19/14 | 62083 |
| 40441 | 1.00 | 11/07/13 | 55958 | | 33094 | 2.00 | 04/10/14 | 62905 |
| 41041 | 1.00 | 11/07/13 | 55960 | | 34920 | 3.00 | 04/16/14 | 62098 |
| 40711 | 6.00 | 11/18/13 | 55933 | | 36941 | 2.00 | 04/24/14 | 62084 |
| 8877 | 3.00 | 12/20/13 | 62010 | | 16758 | 2.00 | 04/24/14 | 62900 |
| 36116 | 0.75 | 12/30/13 | 62016 | | 16754 | 3.00 | 04/24/14 | 62901 |
| 41290 | 1.50 | 02/26/14 | 55837 | | 36441 | 2.00 | 05/05/14 | 62603 |
| 40458 | 0.75 | 02/26/14 | 55838 | | 33209 | 0.75 | 05/07/14 | 62302 |
| 41291 | 1.50 | 03/03/14 | 55812 | | 22856 | 6.00 | 05/12/14 | 62068 |
| 41294 | 1.50 | 03/03/14 | 55813 | | 33611 | 2.00 | 05/20/14 | 62546 |
| 41285 | 1.50 | 03/03/14 | 55814 | | 22183 | 2.00 | 05/22/14 | 62545 |
| 41270 | 1.00 | 03/03/14 | 55815 | | 36187 | 6.00 | 06/02/14 | 62069 |
| 41291 | 1.50 | 03/03/14 | 55819 | | 10274 | 0.75 | 06/18/14 | 62308 |
| 33197 | 0.75 | 03/03/14 | 62031 | | 16927 | 0.75 | 06/18/14 | 62310 |
| 41270 | 0.75 | 03/03/14 | 62038 | | 51019 | 2.00 | 06/18/14 | 62311 |
| 33019 | 0.75 | 03/18/14 | 62608 | | 51020 | 0.75 | 06/18/14 | 62312 |
| 10371 | 4.00 | 03/19/14 | 62082 | | | | | |
| CAPU | | | | | | | | |
| 280542 | 1.50 | 07/30/13 | 61000 | | 19806 | 2.00 | 12/30/13 | 61898 |
| 280543 | 1.50 | 07/30/13 | 61004 | | 19821 | 2.00 | 12/30/13 | 61899 |
| 40262 | 1.00 | 09/09/13 | 55811 | | 280898 | 0.75 | 01/09/14 | 61890 |
| 20541 | 0.75 | 10/15/13 | 61228 | | 40060 | 0.50 | 01/14/14 | 55820 |
| 40387 | 0.75 | 11/26/13 | 1356 | | 40062 | 0.50 | 01/14/14 | 55821 |
| 40387 | 0.75 | 11/26/13 | 1366 | | 281080 | 0.75 | 03/03/14 | 64604 |

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C. Existing Valves Replaced for Any Reason Other Than Leaking

| TAG NUMBER-OLD | SIZE, INCHES | DATE REPLACED | TAG NUMBER-NEW | | TAG NUMBER-OLD | SIZE, INCHES | DATE REPLACED | TAG NUMBER-NEW |
|---|---|---|---|---|---|---|---|---|
| CAPU (continued) | | | | | | | | |
| 40395 | 0.75 | 11/26/13 | 1367 | | 27507 | 2.00 | 03/19/14 | 64132 |
| 280779 | 1.50 | 12/30/13 | 61891 | | 281114 | 0.75 | 04/01/14 | 64608 |
| 280774 | 1.50 | 12/30/13 | 61892 | | 281032 | 1.00 | 05/12/14 | 64114 |
| 280902 | 0.75 | 12/30/13 | 61893 | | 9218 | 1.00 | 05/12/14 | 64115 |
| 280744 | 2.00 | 12/30/13 | 61894 | | 280769 | 2.00 | 05/12/14 | 64119 |
| 280989 | 1.50 | 12/30/13 | 61895 | | 19924 | 0.75 | 05/12/14 | 64120 |
| 9376 | 2.00 | 12/30/13 | 61897 | | 19799 | 1.00 | 05/12/14 | 64122 |
| BAREX UNIT | | | | | | | | |
| 7070 | 2.00 | 08/26/13 | 43311 | | 29327 | 4.00 | 10/10/13 | 41952 |
| 28578 | 0.50 | 08/26/13 | 43310 | | 7759 | 1.00 | 12/30/13 | 42414 |
| 29306 | 4.00 | 10/10/13 | 41951 | | | | | |

**Table 2**
**to INEOS's Second Compliance Status Report under ¶ 64 of Consent Decree**
**submitted July 31, 2014**

Absorber or AOGI Bypass Events, July 1, 2013, through June 30, 2014 (Item k)

| | | | | |
|---|---|---|---|---|
| **BYPASS EVENT 1** | After A Reactor was shut down, B Reactor auto-vented during its shutdown, bypassing the AOGI. There was no release above an RQ because the reactor was shut down minutes later and little organics were left in the system. | | | |
| | Date, time, duration | July 12, 2013, 20:23<br>3.58 hours | | |
| | Quantity of pollutants released | Acetonitrile 0.5 lbs<br>Acrolein 0.1 lbs | Acrylonitrile 1.5 lbs<br>Hydrogen Cyanide 0.5 lbs | |
| | Actions taken to minimize duration | Because of the time required to safely purge the unit, the bypass duration was as minimal as possible. However, the release of most of the organics was minimized to just the first 45 minutes of the bypass by fully shutting down B Reactor immediately and completing the "clean-up" portion of the unit shutdown procedure, leaving little organics to be released. | | |
| | Root cause | When propylene feed was almost fully removed from the B Reactor, ammonia flow fluctuated sufficiently to reach the reactor disengagement point in the logic for the auto-vent. | | |
| | Corrective actions taken to minimize recurrence | The reactor shutdown procedure had been updated after the last similar event to include information on the auto-engagement points on shutdown. The procedure was again reviewed with the operators involved, re-emphasizing monitoring the auto-vent and auto-engagement points during the start-up of the first reactor and the shutdown of the last reactor to try to avoid reaching the points. | | |
| **BYPASS EVENT 2** | The AOGI automatically shut down during B Reactor start-up due to a too-rich off-gas flow. There was no release above an RQ because only one reactor was operating for only a brief time and was shut down immediately after AOGI shutdown. | | | |
| | Date, time, duration | December 13, 2013, 12:23<br>3.31 hours | | |
| | Quantity of pollutants released | Acetonitrile 51.8 lbs<br>Acrolein 0.1 lbs<br>Acrylonitrile 22.2 lbs | | |
| | Actions taken to minimize duration | The bypass duration was the minimum allowed by the time required to safely purge the unit and to clean out organics generated. The duration of organics release was kept much shorter than the bypass duration by shutting down the reactor immediately and completing the clean-up procedure properly. | | |
| | Root cause | The next-door refinery, source of the propylene feed, had reported an issue with propylene purity. Due to freeze-up, INEOS's propylene analyzer was not available to verify, but the purity issue is believed to have caused or contributed to the too-rich off-gas flow to the AOGI, which resulted in an unstable flame and AOGI shutdown on loss of flame detection. | | |
| | Corrective actions taken to minimize recurrence | No actions are available to minimize such recurrence. Because purity issues are known to recur, the AOGI shut-down logic is designed to protect plant personnel in such cases. The procedures to minimize the bypass duration and amount of releases through immediate reactor shutdown and proper clean-up were correctly followed. | | |

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Absorber or AOGI Bypass Events, July 1, 2013, through June 30, 2014 (Item k)

| | | |
|---|---|---|
| **BYPASS EVENT 3** | Both A and B Reactors shut down inadvertently when an instrument air line was damaged from falling ice. Upon restart of B Reactor airflow with the Absorber venting to atmosphere per procedure, acrolein and HCN releases above their RQs occurred due to some HCN-service equipment still connected to the system and because the full clean-out procedure could not be performed on B Reactor prior to its start-up. | |
| | Date, time, duration | January 31, 2014, 03:23<br>10.23 hours |
| | Quantity of pollutants released | Acrolein 2.2 lbs<br>Acrylonitrile 1.6 lbs<br>Hydrogen Cyanide 17.2 lbs |
| | Actions taken to minimize duration | After identifying that scrubber water containing emissions from some equipment in HCN service was still being fed and reaching the Absorber, the water was closed off, and the releases from the Absorber decreased thus minimizing the duration. |
| | Root cause | - The procedure for clean-up after a Spontaneous Reactor Shutdown could not be fully followed. The procedure states to close off the make-up water to the Absorber and water from the vent scrubber that controls HCN-service equipment as well as other steps to prevent organics being added back to the system.<br>- Not being able to conduct the reverse ammonia burn on B Reactor due to the force majeure nature of the shutdown potentially contributed to the release quantity. |
| | Corrective actions taken to minimize recurrence | - Discussed with operators the impact of organics remaining in the system during restart; factors involved and methods to mitigate high losses during bypasses; and sources of organics that have contributed to past incidents.<br>- Shutdown and clean-up procedures will be reviewed and updated as necessary to include sources of organics due to carryover to the Absorber that have been identified from past events.<br>- The start-up procedure will be reviewed and updated as necessary to include the monitoring of Absorber losses as the start-up proceeds.<br>- A checklist will be developed for shutdowns or start-ups to ensure all organic sources have been isolated.<br>- The cumulative release quantities from the Absorber vent during bypasses will be included on the DCS display, and operators will be trained on the purpose for the quantities and their required response. |

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**submitted July 31, 2014**

Absorber or AOGI Bypass Events, July 1, 2013, through June 30, 2014 (Item k)

| | | | |
|---|---|---|---|
| **BYPASS EVENT 4** | The Absorber vent valve opened to atmosphere spontaneously due to a failed solenoid. There was no release above an RQ. | | |
| | Date, time, duration | April 16, 2014, 02:07<br>1.40 hours | |
| | Quantity of pollutants released (Note) | Acetonitrile 1.9 lbs<br>Non-methane hydrocarbon 4926 lbs | Carbon monoxide 3998 lbs<br>Nitrogen oxides 140 lbs |
| | Actions taken to minimize duration | The valve was manually closed as quickly as possible. | |
| | Root cause | One of the two redundant solenoids on the air actuator of this valve had a coil burn-out, which caused the valve to revert to its fail-safe position of open to atmosphere. | |
| | Corrective actions taken to minimize recurrence | - The valve stop has been temporarily removed. The valve can still be hand-jacked using a hydraulic jack, but the stop must be installed in order to remove the valve from the line at a future date.<br>- A plan for making the repair will be developed. | |
| **BYPASS EVENT 5** | Both A and B Reactors shut down due to failure of the positioner on a control valve in the steam system and resulting steam header changes. There was no release above an RQ upon reactor restart. | | |
| | Date, time, duration | May 11, 2014, 05:35<br>5.13 hours | |
| | Quantity of pollutants released | Acetonitrile 95.5 lbs<br>Acrolein 0.4 lbs<br>Hydrogen Cyanide 7.8 lbs | |
| | Actions taken to minimize duration | The bypass duration was as minimal as possible per the procedure for a reactor airflow restart that requires the Absorber venting to atmosphere. | |
| | Root cause | Even though the unit clean-up procedure was followed correctly, after a Spontaneous Reactor Shutdown, it is normal and unavoidable that some residual level of organics may still remain in the system to be released from the Absorber during restart. | |
| | Corrective actions taken to minimize recurrence | No actions are available to minimize the recurrence of inadvertent reactor shutdowns that result from such unanticipated malfunctions. | |

Note: Releases of Non-methane hydrocarbon, Carbon monoxide, and Nitrogen oxides: (1) occur continuously during normal operation as well as during bypasses; (2) are permitted and included in periodic permit reports; and (3) do not have RQ levels so are not included in CERCLA/EPCRA release reports.

**ATTACHMENT 1**

Summary of LDAR Audit Results

Table 1-1 from
INEOS 2nd LDAR Audit Report
Audit completed
March 26, 2014

## Table 1-1
## Audit Requirements and Results

| CD CITATION PARAGRAPH | AUDIT REQUIREMENT | AUDIT RESULTS (*Compliance Issues Listed in Italics*) |
|---|---|---|
| 46(i) | Review compliance with all applicable LDAR regulations and the CD's Enhanced LDAR Program (ELP) including LDAR requirements related to valves, connectors, pumps, agitators and Open Ended Lines (OELs) in heavy liquid service. | **No Compliance Findings:**<br>• A field verification of randomly selected Difficult to Monitor (DTM) valves indicated that all were properly classified as DTM.<br>• Component tagging was found to be in good order.<br>• LDAR database rules were reviewed for accuracy with no issues noted.<br>• A records review indicated compliance with the CD's ELP low-emission (Low-E) valve replacement requirements. |
| 43a<br>[46(ii)] | Verify appropriate monitoring frequencies. | **No Compliance Findings:**<br>• A database review of monitoring records from 1st Quarter 2012 through 4th Quarter 2013 indicated that LDAR valves, connectors, pumps, agitators and Open Ended Line Closure Devices (OELCDs) were being monitored at the correct frequencies. |
| 43b<br>[46(ii)] | Verify that proper documentation and sign offs have been recorded for all equipment placed on the Delay of Repair (DOR) list. | **No Compliance Findings:**<br>• INEOS had one (1) component on DOR at the time of the audit. The auditors verified that this component was correctly tagged with a weatherproof Leaker Tag. Proper DOR documentation and sign offs were also on file. |
| 43c<br>[46(ii)] | Ensure that repairs have been performed in the required periods. | **No Compliance Findings:**<br>• Database records from 1st Quarter 2012 through 4th Quarter 2013 were reviewed for compliance with first and final repair deadlines. All leaking components were either repaired within 15 days or put on DOR. |
| 43d<br>[46(ii)] | Review monitoring data and equipment counts for feasibility (e.g., number of pieces of equipment monitored per day) and unusual trends. | **No Compliance Findings:**<br>• Component monitoring counts were calculated and monitoring data was reviewed for abnormalities. Monitoring pace was judged to be reasonable. No instances of faster than normal (>300 components/day) were noted during the data review period.<br>• No monitoring abnormalities were detected. |

| CD CITATION PARAGRAPH | AUDIT REQUIREMENT | AUDIT RESULTS (*Compliance Issues Listed in Italics*) |
|---|---|---|
| 43e [46(ii)] | Verify that proper calibration records and monitoring instrument maintenance information are maintained. | **No Compliance Findings:**<br>• Calibration records for April 2013were reviewed and instrument calibration by two (2) monitoring technicians was observed. No compliance issues were noted.<br>• Calibration gas certification records were reviewed for compliance with expiration dates and accuracy requirements. No issues were noted. |
| 43f [46(ii)] | Verify that other LDAR program records are maintained as required. | **No Compliance Findings:**<br>• Compliance with DTM /Unsafe to Monitor (UTM) justification was reviewed. No compliance issues were noted.<br>• The facility's Management of Change (MOC) program was reviewed. No systemic issues were noted.<br>• The facility's LDAR Quality Assurance/Quality Control (QA/QC) procedures were reviewed. No issues were noted. |
| 43g | Observe in the field each LDAR monitoring technician who is conducting leak detection monitoring to ensure that monitoring is being conducted as required. | **One Compliance Finding:**<br>• *More thorough monitoring of pumps and some flanges should be performed.*<br>• Monitoring pace and coverage of valves and non-flange connectors were judged to be appropriate. |
| 46(iii) | Review whether any pieces of equipment that are required to be in the LDAR program are not included. | **No Compliance Findings:**<br>• A database review, field inspections, and a review of marked up Process and Instrumentation Drawings (P&IDs) did not indicate any components or process lines that had been overlooked from the LDAR inventory. |
| 47 [46(iv)] | Perform Comparative Monitoring of Different Component Types in Covered Units and Calculate Leak Percentages and the Comparative Monitoring Leak Ratio for each. | **One Compliance Finding:**<br>• *The comparative monitoring resulted in four (4) instances of Comparative Monitoring Leak Ratios $\geq$3 and the Comparative Monitoring Leak Percentage $\geq$0.5%.* |